CHALLIS SAGE-GROUSE CONSERVATION PLAN

FINAL

Developed by:
The Challis Sage-grouse Local Working Group

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Glossary of Terms

Arid:	Lacking moisture, especially having insufficient rainfall to support trees or woody plants (American Heritage 2005). An environment with a high precipitation deficit (Wikipedia 2007).
Habitat fragmentation:	A process of environmental change that describes the emergence of discontinuities (fragmentation) in an organism's preferred environment (habitat). habitat fragmentation can be considered to include six discrete processes: reduction in the total area of the habitat; increase in the amount of edge; decrease in the amount of interior habitat; isolation of one habitat from other areas of habitat; breaking up of one patch of habitat into several smaller patches; and decrease in the average size of each patch of habitat (Wikipedia 2007).
Hydric:	Relating to, characterized by, or requiring considerable moisture (American Heritage 2007).
Hydrophytic:	Plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (COE 1995).
Invasive:	An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Presidential Executive Order 13112)
Lek:	A lek is a gathering of males of certain species of animal for the purposes of competitive mating display, held before and during the breeding season, day after day. The same group of males meet at a traditional place and take up the same individual positions on an arena, each occupying and defending a small territory or court. Intermittently or continuously, they spar individually with their neighbours or put on extravagant visual or aural displays (mating "dances" or gymnastics, plumage displays, vocal challenges, etc.) (Wikipedia 2007).
Multiple Indicator Monitoring:	A detailed long-term monitoring protocol using simple refinements of various existing protocols to measure stream and riparian vegetative attributes and, thus, provide useful data regarding the general condition and trend of stream channels and riparian vegetation regardless of the kind of activities or uses occurring on the site.

Mesic:	Of, characterized by, or adapted to a moderately moist habitat (American Heritage 2005). A type of habitat with a moderate or a well-balanced supply of moisture (Wikipedia 2007)
Proper Functioning Condition:	When adequate vegetation, landform, or large woody debris is present to: dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; support greater biodiversity (USDI 1998).
Seral stage (community):	An intermediate point of vegetation development of an area where an ecosystem is advancing towards its climax community A seral community is the name given to each group of plants within the succession (Wikipedia 2007).
Xeric:	Of, characterized by, or adapted to an extremely dry habitat (American Heritage 2005).

Citations

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USDI (US Dept. of Interior). 1998. Process for Assessing Proper Functioning Condition. Technical Reference 1737-9. BLM Service Ctr, Denver, CO. 60pp.

Wikipedia, The Free Encyclopedia. http://www.en.wikipedia.org/w/index.php. Revised 2007.

Acronym List

BLM	Bureau of Land Management
Challis SGPA	Challis Sage-grouse Planning Area
Challis LWG	Challis Sage-grouse Local Working Group
CWMA	Cooperative Weed Management Area
IDFG	Idaho Department of Fish and Game
NRCS	Natural Resources Conservation Service
PFC	Properly Functioning Condition
USFS	United States Forest Service
WFSA	Wildland Fire Situation Analysis

CHALLIS SAGE-GROUSE LOCAL WORKING GROUP'S SAGE-GROUSE CONSERVATION PLAN

I. Introduction

The Idaho Department of Fish and Game (IDFG) published a Sage-grouse Management Plan in 1997 that called for the development of local working groups throughout the state to develop local management plans for increasing greater sage-grouse (sage-grouse) populations. Soon after the state plan was signed, the Upper Snake Sage-grouse Local Working Group was formed. This group incorporated the areas of Custer and Lemhi Counties that had sage-grouse populations into their discussion. In July 2002, during a meeting with the Challis Experimental Stewardship Program, the Upper Snake Sage-grouse Local Working Group discussed forming a local sage-grouse working group for the Challis area. Both private citizens and public agencies agreed that the Challis Sage-grouse Planning Area (Challis SGPA) was different enough from the Upper Snake Sage-grouse Planning Area to warrant a separate group to develop conservation measures that were appropriate to local conditions. The Challis Sage-grouse Local Working Group (Challis LWG) was formed with a first meeting in December 2002.

The Challis LWG has met approximately once a month from December 2002 through the present time. The group has strived to keep the appropriate government agencies, private individuals, and private groups involved in the process. The group began by discussing the risks to sage-grouse in the Challis SGPA and then proceeded to develop conservation measures to help alleviate those risks. As the plan development proceeded, the group has also focused on compiling existing data and collecting new data. The Challis LWG continues to facilitate on-the-ground projects designed to improve and protect sage-grouse habitat. The Challis SGPA is illustrated in Figure I.

The purpose of the Challis LWG is to plan and oversee implementation of conservation measures that will result in a stable, healthy sage-grouse population within sustainable habitats. Management of sage-grouse populations and habitat (including historical) should occur in a socially, economically, and ecologically focused manner.

II. Vision Statement

The vision of the Challis LWG in the Challis SGPA is to:

- Maintain, and where possible, increase the sage-grouse population using adaptive management practices;
- Develop more local in-depth knowledge about sage-grouse and sagebrush ecosystems;
- Maintain, restore and enhance diverse, healthy, sagebrush communities using adaptive management practices;
- Identify important data gaps and utilize existing protocols for collecting relevant information regarding sage-grouse and sagebrush habitat for management purposes;
- Increase public involvement in the planning, management, and implementation process; and
- Increase cooperation between land and wildlife management agencies and private property owners.

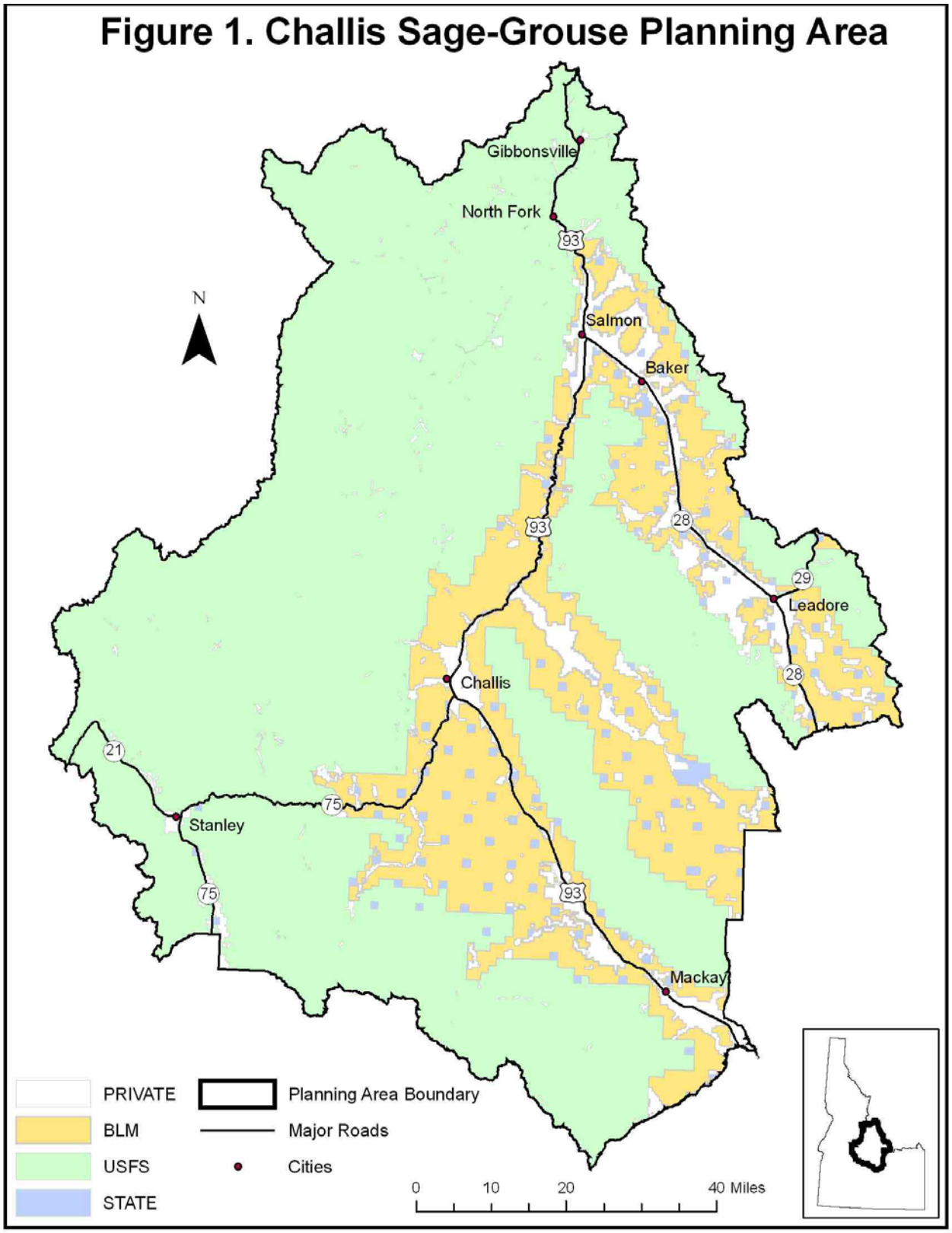


Figure 1. Challis Sage-Grouse Planning Area
Gibbonsville
North Fork
93
N
Salmon
Baker
93
28
29
Leadore
28
Challis
21
75
Stanley
75
93
Mackay
PRIVATE
BLM
USFS
STATE
Planning Area Boundary
Major Roads
Cities
0
10
20
40 Miles

III. Challis Sage-grouse Planning Area Habitat Guidelines

These guidelines are based on local site knowledge and the Connelly et al. (2000) Guidelines to manage sage-grouse populations and their habitats (Appendix B).

Breeding habitats

Breeding areas, called leks, generally occur in open areas surrounded by sagebrush from mid-March through mid-May. Local examples include low sagebrush flats and ridge tops, landing strips, old lakebeds, unpaved roads, cropland, and burned areas. Sage-grouse males form leks opportunistically at sites within or adjacent to potential nesting habitat. Nesting habitat and leks should be managed to attain or support the following conditions (Connelly, et al. 2000):

	Height		Canopy cover (%)
	Centimeter	Inches	
Mesic site:			
Sagebrush	40-80	16-31	15-25
Grass-forb	>18	>7	≥25 (15% perennial grasses and 10% forbs)
Arid site:			
Sagebrush	30-80	12-31	15-25
Grass-forb	>18	>7	≥15

Habitats used by pre-laying hens are part of the breeding habitat. These areas should provide a diversity of forbs high in calcium, phosphorus, and protein. The ecological condition of these areas may greatly affect nest initiation rate, clutch size, and subsequent reproductive success.

Sage-grouse hens typically select nest sites under sagebrush, although other shrub species may be used. Nests occurring under sagebrush cover have higher nest success than other cover types. The mean height of sagebrush most commonly used by nesting grouse ranges from 30 to 80 cm (12-31 in) and nests tend to be under the tallest sagebrush within a stand. In general, sage-grouse nesting occurs under shrubs having larger canopies and more ground and lateral cover (spreading growth form rather than columnar).

Grass height and cover are important components of sage-grouse nest sites. Herbaceous cover associated with nest sites may provide scent, visual, and physical barriers to potential predators.

Early brood-rearing habitats

Early brood-rearing areas occur in upland sagebrush habitats relatively close to nest sites, but movements of individual broods may vary. The period of early brood-rearing is from mid-April to mid-June. These habitats may be relatively open (about 15% sagebrush canopy cover) stands of sagebrush with >15% canopy cover of grasses and forbs. Great plant species richness with abundant forbs and insects characterize brood areas. Insects, especially ants (*Hymenoptera*) and beetles (*Coleoptera*) are an important component of early brood-rearing habitat.

Early brood-rearing habitats should be managed to attain or support the following conditions which are the same for both mesic and arid sites (Connelly, et al. 2000):

	Height		Canopy Cover (%)
	Centimeter	Inches	
Sagebrush	40-80	16-31	10-25
Grass-forb	variable	variable	>15

Summer late brood-rearing habitats

As sagebrush habitats desiccate, sage-grouse usually move to more mesic sites which are higher in forb availability from June through August. Suitable habitat would be meadow or riparian areas dominated by mesic or hydric (also hydrophytic) plant species. The habitat should not have evidence of excessive erosion, though there may be some bare ground. The habitat suitability decreases as erosion increases or as xeric species invade the riparian/wetland zone. The presence of succulent, green forbs is essential. There should be sagebrush cover adjacent to the riparian/wetland zones to provide escape or protective cover. There are some upland sagebrush communities that provide late brood-rearing habitat due to elevation which helps to retain succulent, green forbs later into the summer. Wet meadows, springs, riparian zones and alfalfa fields are locally important. These mesic areas should be managed for Proper Functioning Condition (PFC) (BLM Technical Reference 1737-9).

Winter habitats

Movements to winter range are slow and meandering, and occur from late August to December. Wintering habitat is utilized from November through March. Feeding habits generally shift from forbs in early fall to sagebrush in winter. Characteristics of sage-grouse winter habitats are relatively similar throughout most of the species' range. During winter, sage-grouse feed almost exclusively on leaves of sagebrush in stands generally >15 % sagebrush cover. On winter ranges, areas with access to sagebrush above the snow (such as south slopes and wind blown ridges) are important. Winter habitats should be managed to sustain healthy sagebrush communities on a landscape scale, allowing sage-grouse access to sagebrush stands with canopy cover of 10–30% and heights of at least 25–35 cm (10-14 in) above snow cover.

IV. Status of Sage-grouse Population and Habitat

Background information related to sagebrush and sage-grouse ecology is readily available in the Conservation Plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee 2006) and in the Conservation Assessment of greater sage-grouse and sagebrush habitats (Connelly, et al. 2004). Information from these documents is not repeated here. Following is a summary of locally specific information.

A. Population

The total year-round population of sage-grouse in the Challis SGPA has not been estimated. However, population trends on individual leks have been tracked since the early 1960's in the Challis SGPA. Population trends are determined by counting the number of males observed strutting on lek routes in the spring. Lek routes are one or more associated leks which the same males may use during a breeding season. Typically, the same leks are counted four times each spring and the highest count is reported. Established techniques are used to assure route count

consistency from one year to the next. (Refer to Section 5.2.1.1 of the Statewide Conservation Plan for general instructions for counting lek routes.)

Figure 2 illustrates the total number of male sage-grouse counted between 1986 and 2006 on population indexed routes within the Challis SGPA. More data related to the individual lek route counts in the Challis SGPA are presented in Appendix A.

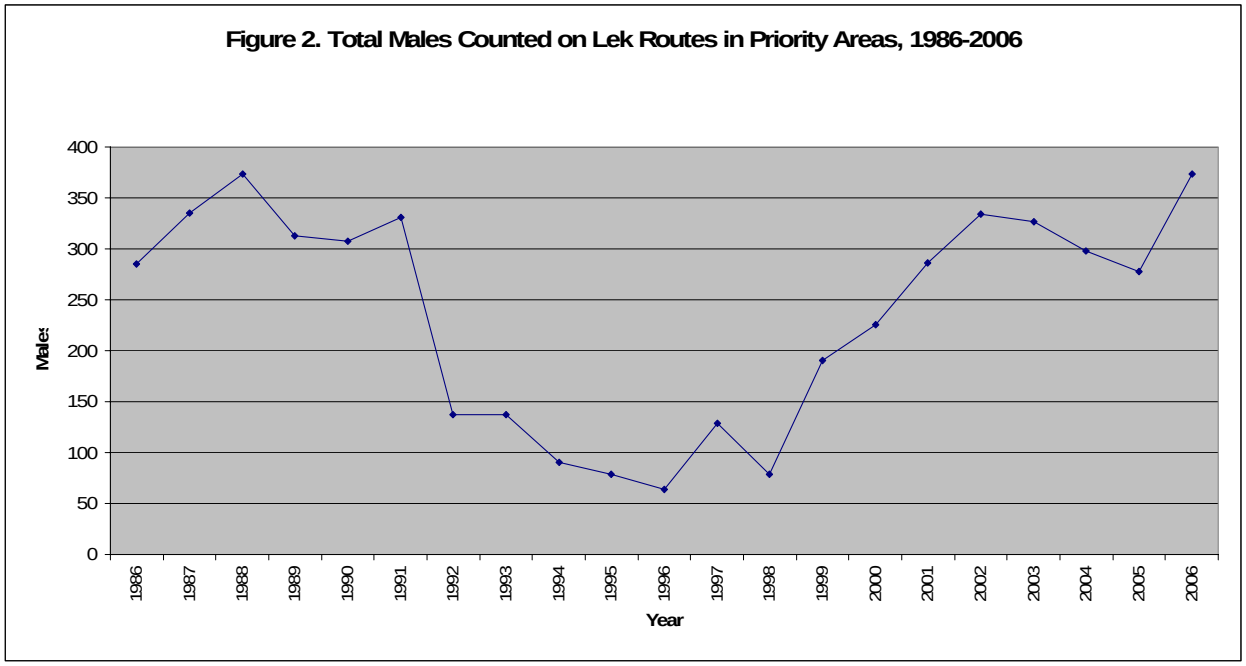
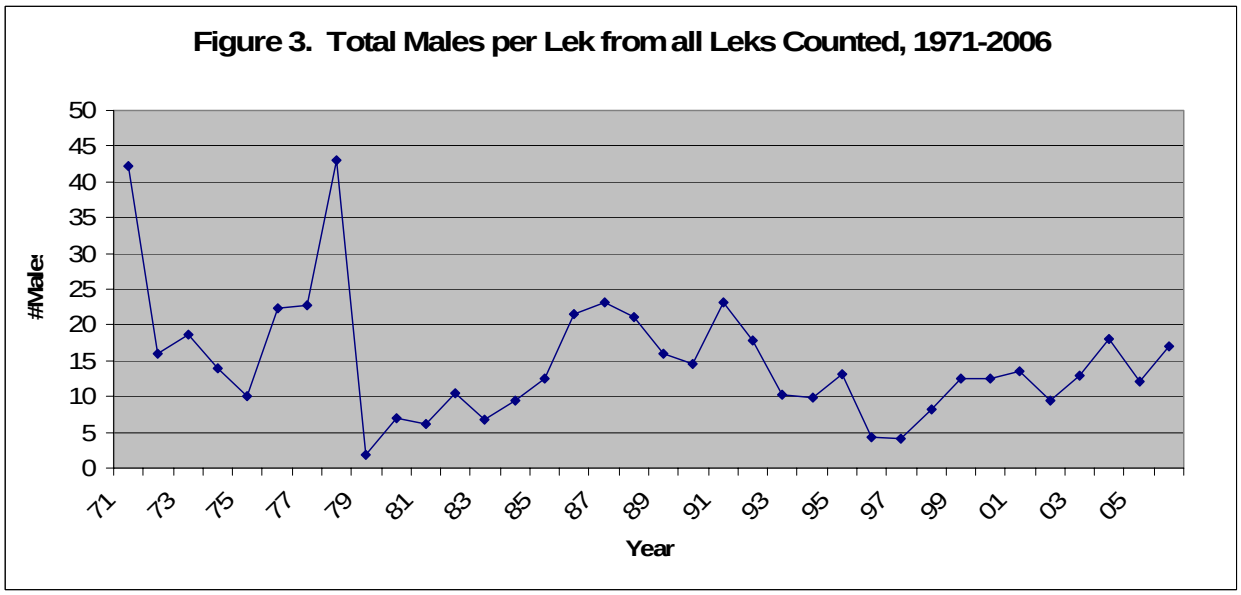


Figure 3 summarizes the average number of males counted on all leks 1971-2006.



More data related to the individual lek route counts in the Challis Sage-grouse Planning Area are presented in Appendix A.

A method that is used to track production trends analyzes data derived from sage-grouse wings deposited into barrels by hunters. Table 1 below presents various production trends based on wing data for sage-grouse in the Salmon Fish and Game region from 1979 through 2004.

Table 1. Greater sage-grouse production based on wing collections[1], Salmon Region, 1979- 2005

Year	Juveniles per 100 females	Juveniles per 100 adults	Percent unsuccessful females
1979	275	149	60
1980	188	102	66
1981	118	75	45
1982	157	113	57
1983	275	133	36
1984	228	134	52
1985	150	72	53
1986	247	159	45
1987	126	61	53
1988	143	72	
1989	177	98	
1990	175	116	
1991	168	100	69
1992	150	70	70
1993	149	100	56
1994	133	83	57
1995	78	40	
1996	320	155	47
1997	257	189	43
1998	520	347	60
1999	325	173	63
2000	149	100	51
2001	218	117	55
2002	229	114	67
2003	280	124	73
2004	190	121	81
2005	117	50	44
Average of the last ten years	261	149	58

[1] Data derived from small sample sizes (less than 100 per year)

Harvest data are available for various locations around the State from 1985 to the present. Table 2 below shows the estimated greater sage-grouse harvest for the Salmon Fish and Game Region from 1985 to 2004 based on check station and telephone survey.

Table 2. Estimated greater sage-grouse harvest, Salmon Region, 1985- 2005

Year	Check Station[a]				Telephone Survey[b]		
	Hunters	Birds harvested	Birds/ hunter	Hours/ bird	Hunters	Birds harvested	Birds/ hunter day
1985	180	228	1.3	6.5	667	976	0.8
1986	106	147	1.4	4.5	390	911	1.9
1987	117	265	2.3	3.0	625	2,852	2.0
1988	120	276	2.3	3.0	727	2,326	0.8
1989	125	192	1.5	3.6	560	974	0.8
1990	155	167	1.1	3.9	519	1,842	1.1
1991	91	153	1.7	4.1	760	2,122	0.8
1992	93	105	1.1	7.0	913	941	0.4
1993	84	48	0.6	13.1	1,670	2,620	0.6
1994	74	64	0.9	7.1	1,236	4,327	0.9
1995	79	25	0.3	23.9	1,117	2,132	0.4
1996	68	31	0.5	9.2			
1997	42	19	0.5	11.1			
1998	62	29	0.5	7.5			
1999	56	50	0.9	4.1			
2000	48	60	1.3	5.7	526	788	1.5
2001	41	29	0.7	7.8	440	571	1.3
2002	63	60	1.0	6.4	629	956	0.7
2003	52	50	1.0	7.9			
2004	25	20	0.8	5.4	364	459	0.6
2005	33	40	1.2	7.7	728	949	0.7
Average of the last ten years	49	39	0.8	7.3	537	745	1.0

[a] Howe and Sage Junction check stations.

[b] Telephone survey data at the Regional level were not collected from 1996-1999. Data from 2000-2003 includes all mountain-valley areas (zones 7A and 7B). Telephone survey data for 2003 is not available.

B. Habitat

Information about sage-grouse habitats in the Challis SGPA is not readily available. In particular, there is very little information about habitat condition. Consequently, efforts to compile information about sage-grouse habitat are on-going.

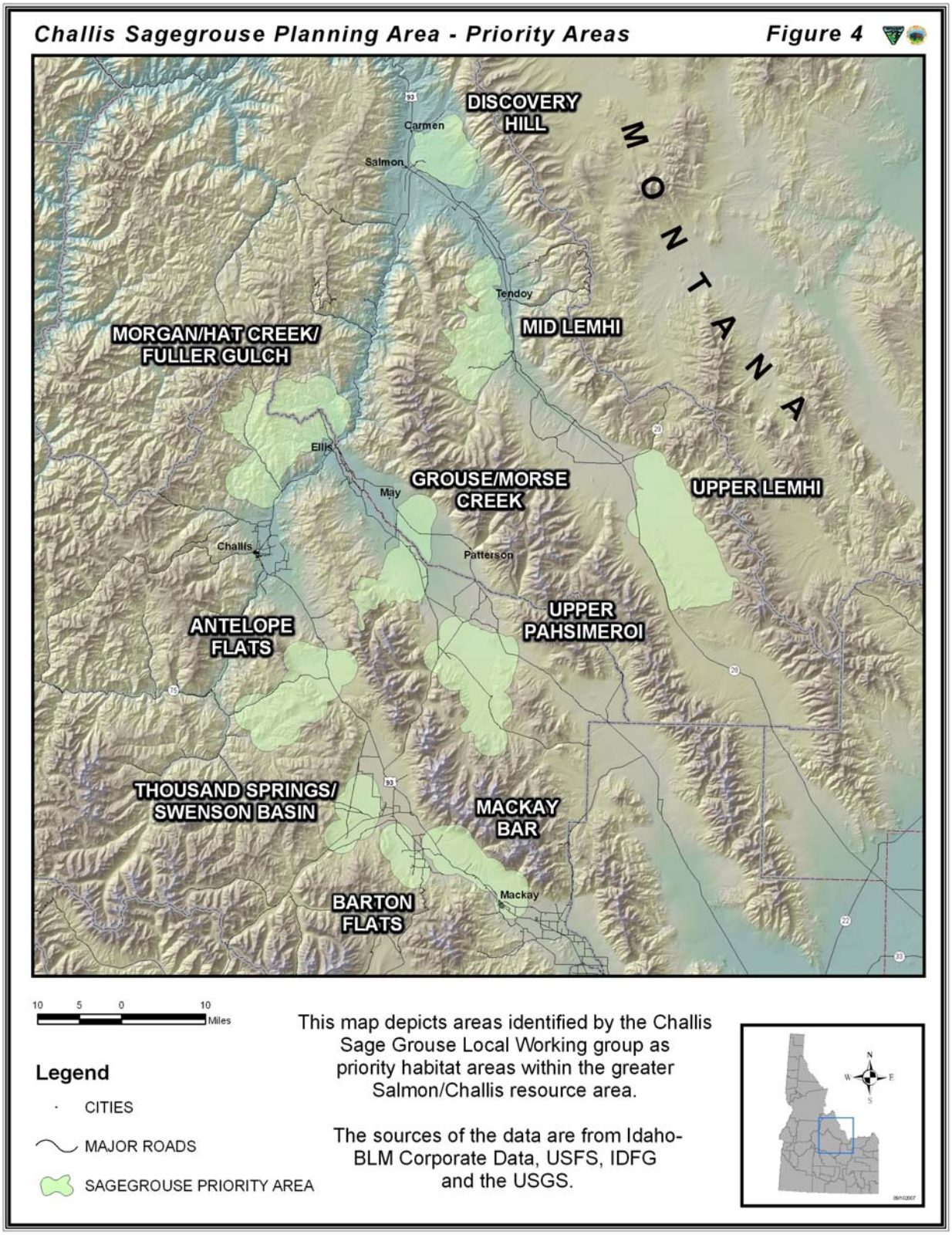
The Challis LWG used telemetry, lek data, observations, and Bureau of Land Management (BLM) Resource Management Plans to develop a map of priority habitat areas within the Challis SGPA (Figure 3). This map does not illustrate all habitat areas; rather, it depicts those areas that are deemed to be of highest priority for protection and restoration. This map will be revised on an as-needed basis to reflect new data.

The following 11 areas have been identified by the Challis LWG as "current" priority habitat areas for sage-grouse in the Challis SGPA, including leks:

- Upper Pahsimeroi Valley;
- Upper Lemhi Valley;
- Thousand Springs/Swensen Basin;
- Mackay Bar;
- Morgan/Hat Creek/Fuller Gulch;
- Discovery Hill;
- Grouse/Morse Creek;
- Antelope Flats;
- Barton Flats; and
- Mid-Lemhi.

The Challis Sage Grouse Local Working Group Data Compilation Report, dated October 2005, was prepared under a contract between the Challis LWG and Whitebark, Inc.

The Challis LWG has identified gaps in the data and intends to conduct additional efforts to support this Plan.


Challis Sagegrouse Planning Area - Priority Areas
Figure 4
DISCOVERY HILL
Carmen
Salmon
MONTANA
Tendoy
MID LEMHI
MORGAN/HAT CREEK/ FULLER GULCH
Ellis
May
GROUSE/MORSE CREEK
UPPER LEMHI
Challis
Patterson
UPPER PAHSIMEROI
ANTELOPE FLATS
THOUSAND SPRINGS/ SWENSON BASIN
MACKAY BAR
Mackay
BARTON FLATS
10 5 0 10 Miles
Legend
CITIES
MAJOR ROADS
SAGEGROUSE PRIORITY AREA
This map depicts areas identified by the Challis Sage Grouse Local Working group as priority habitat areas within the greater Salmon/Challis resource area.
The sources of the data are from Idaho-BLM Corporate Data, USFS, IDFG and the USGS.

V. Risks to Sage-grouse Populations and Habitats

At this time, the Challis LWG believes the following risks to sage-grouse populations and habitats exist in, and are specifically considered for the Challis SGPA. These risks are listed in approximate order of magnitude:

High risks:

- Habitat fragmentation;
- Invasive plant species (noxious weeds, cheatgrass and other undesirable non-native vegetation); and
- Inappropriate management strategies.

Medium risks:

- Improper livestock management;
- Fire; and
- Other natural causes.

Low risks:

- Excessive predation;
- Human disturbance;
- Health risks to sage-grouse populations;
- Overharvest; and
- Successional vegetation changes in brood-rearing habitat.

In some cases, a specific nesting or brood-rearing habitat area may be determined to be incapable of meeting sage-grouse habitat needs defined by the sage-grouse guidelines due to ecological site potential. Where site potential prevents attainment of suitable vegetative communities, the situation should be acknowledged.

VI. Recommended Conservation Measures to Address Risks to Sage-grouse Populations and Habitats

The following conservation measures are intended as recommendations to be considered and implemented to the extent possible, with the realization that other management concerns and priorities may exist in certain situations or locations.

A. Habitat Fragmentation – High Risk

1. Goal

The goal is to reduce risks of habitat fragmentation resulting from off-highway vehicles (OHV) use, land use conversion, and infrastructure development.

2. Risks

Risks to sage-grouse populations were identified for each of the four seasonal use areas, i.e., leks, nesting, brood-rearing, and winter habitat.

a. Lek Habitat Areas

Five specific risks associated with habitat fragmentation in the vicinity of lek areas were identified:

- Collisions with fences resulting from construction of fences within flight paths of leks or too close to leks;
- Loss of sagebrush cover resulting from OHV activities;
- Increased avian predation resulting from communications and power transmission lines, and structures, i.e., poles and towers being constructed too close to leks, thus providing predator perching sites;
- Direct loss of leks resulting from roads, mining, conversion to cultivated agriculture, urban expansion, and rangeland development; and
- Indirect loss of leks resulting from structures which cause abandonment of the lek, i.e., transmission lines, roads, fences, power poles, etc.

b. Nesting Habitat Areas

Three specific risks associated with habitat fragmentation in nesting habitat areas were identified:

- Indirect impacts to habitat value resulting from utility development, dump sites and transfer stations, and fences;
- Permanent or long-term loss of habitat resulting from agricultural conversion, roads, mining, urbanization, and wind farm development; and
- Loss of sagebrush cover resulting from OHV activities.

c, Brood-Rearing Habitat Areas

Three specific risks associated with habitat fragmentation in brood-rearing habitat were identified:

- Permanent habitat loss resulting from conversion to cultivated agriculture, mining, utility development, and urbanization;
- Damage to wetlands resulting from inappropriate OHV activities; and
- Damage to wetlands resulting from roads and other uses that affect hydrology.

d. Winter Habitat Areas

Three specific risks associated with habitat fragmentation in winter habitat were identified:

- Permanent habitat loss resulting from OHV activities, cultivated agriculture, utility development, mining, and urbanization;
- Mechanical treatments resulting in a sagebrush mix that is inconsistent with winter habitat needs; and
- Chemical treatments resulting in a sagebrush mix that is inconsistent with winter habitat needs.

3. Conservation Measures

The following conservation measures are designed to address the above risks related to habitat fragmentation.

To address risks associated with bird-fence collisions in lek areas:

1. All land managers[2] should increase the visibility of fences and other structures if these structures are documented to be hazardous to flying grouse (e.g., birds have been observed hittin or narrowly missing these structures or grouse remains have been found next to these structures);
2. All land managers should avoid construction of fences within 0.6 miles of active leks; and
3. All land managers should consider alternatives to fencing and alternative fence designs in active lek areas.

To address risks in all habitats resulting from OHV activities:

1. The Challis LWG should review existing and proposed resource management plans/travel management plans and evaluate impacts to sage-grouse habitats;
2. The land management agencies[3] should develop travel management plans where they do not exist or revise existing plans that are inadequate;
3. All land managers should consider avoiding sage-grouse habitats when developing OHV timing and use restriction;
4. The Challis LWG should provide comments to the land management agencies whenever those agencies are developing OHV timing and use restrictions. In order to accomplish this conservation measure, the Challis LWG will request to be added to mailing lists for all travel planning documents;
5. The Challis LWG should notify the land management agencies that are responsible for enforcement of OHV activities and timing restrictions as to seasonal use areas for priority enforcement;
6. The Challis LWG, in cooperation with the land management agencies, Idaho Department of Parks and Recreation, and user groups, should educate the public about the impacts of OHV activities on sage-grouse habitats; and
7. The land management agencies should place education materials at visitor information centers throughout the Challis SGPA.

To address risks associated with excessive avian predation resulting from the placement of transmission lines and structures:

1. All land managers should consider the alternative of underground powerlines in the vicinity of sage-grouse habitats;
2. The land management agencies should consider sage-grouse habitats when siting new utility corridors and facilities; and
3. All land managers should identify areas with existing utility lines in sage-grouse habitats and work with utility companies to install anti-perching devices.

To address risks associated with landfills and transfer stations:

1. When siting new landfills and transfer stations, land management agencies and local governments (in consultation with IDFG) should consider alternatives that would avoid sage-grouse habitats where possible.

To address risks associated with communication sites in the vicinity of seasonal habitats:

1. Land management agencies should consolidate new communication site development in areas of existing communication sites.

To address risks associated with pressures to urbanize areas that serve as sage-grouse habitat:

[2] Throughout this document, the term land managers applies to all private landowners and public agencies with land management and oversight responsibilities, including IDFG.

[3] Throughout this document, the term land management agencies is meant to apply to all public agencies with land management and oversight responsibilities, including IDFG.

1. The Challis LWG should encourage securing conservation easements and development of incentives to maintain native rangelands;
2. The Challis LWG should encourage conservation easement purchases in the vicinity of critical habitats; and
3. The Challis LWG and IDFG should provide input during development of county land-use plans to encourage open space in sage-grouse habitats.

To address risks associated with permanent or long-term loss of habitat resulting from roads:

1. The land management agencies, in reviewing travel management plans, should consider consolidation of multiple roads leading to the same location (where users have developed new roads to avoid seasonal conditions) in seasonal habitats. In order to accomplish this conservation measure, all Challis LWG members are encouraged to participate in local land-use planning processes;
2. All land managers should minimize new road construction in nesting and winter habitats; and
3. All land managers should consider alterations to roads that are affecting wetland hydrology through maintenance, relocation, closure, culverts, and other measures.

To address risks associated with permanent or long-term loss of habitat resulting from mining:

1. The land management agencies should consult with biologists when reviewing notices and mine plans for new mines and gravel pits.

To address risks associated with permanent or long-term loss of habitat resulting from wind farms:

1. All land managers should avoid siting new wind farm developments in priority habitat areas on an ongoing basis.
2. The Challis LWG should review proposals and make recommendations for siting wind farm development

B. Invasive Plant Species – High Risk

1. Goal

The goal is to control, halt the spread of, and /or prevent establishment of invasive, non-native plant species in all sage-grouse habitat areas.

2. Risks

Five specific risks to sage-grouse habitats associated with invasives were identified:

- Loss of sagebrush cover associated with leks;
- Alterations to sagebrush communities that are inconsistent with nesting habitat requirements;
- Alterations to the sagebrush/forb component in brood-rearing habitat resulting from non-native annual plant invasion when sagebrush seedlings are absent;
- Alterations to the sagebrush/forb component in brood-rearing habitat resulting from non-native annual plant invasion when sagebrush seedlings are present; and
- Alterations to the sagebrush mix that is inconsistent with winter habitat needs.

3. Conservation Measures

The following conservation measures are designed to address the above risks related to invasives:

1. The Cooperative Weed Management Areas (CWMA), in cooperation with all land managers, should encourage the continuing inventory for invasives;
2. The Challis LWG and all land managers should continue to support the CWMA efforts to treat invasives;
3. The Challis LWG should prioritize areas for treatment in sage-grouse habitats where non-natives have invaded, and collaborate with the CWMA and land managers to implement restoration projects. These projects could include reseeding if appropriate;
4. All land managers should minimize new surface disturbances that create an opportunity for colonization of invasives and consider reseeding if appropriate;
5. The land management agencies should consider stipulations and reclamation requirements emphasizing the use of native species when authorizing new right-of-ways and mine plans;
6. The land management agencies should consider stipulations and reclamation requirements emphasizing the use of native species when updating existing right-of-ways; and
7. The land management agencies should require vehicle washing to remove invasive weeds at fire camps and other appropriate locations.

C. Inappropriate Management Strategies – High Risk

1. Goal

The goal is to reduce risks resulting from data gaps and a failure to address changing conditions.

2. Risks

Four specific risks to sage-grouse populations associated with inappropriate management strategies were identified:

- Inappropriate management strategies resulting from inadequate data on population status and trends;
- Inappropriate management strategies resulting from inadequate data on habitat condition and use;
- Inappropriate management strategies resulting from inadequate site specific knowledge, including site potential; and
- Inability of land management agencies to respond to current conditions and needs.

3. Conservation Measures

To address risks posed by inappropriate management strategies that result from inadequate data on population status and trends.

1. Whitebark, Inc. will compile and verify known data on population status and trend (*completed);*
2. The Challis LWG will coordinate with partners to acquire additional population data and enhance the understanding of population trends through telemetry studies, aerial lek searches, lek route counts, etc. Activities to date include the Pahsimeroi, Lemhi, and Ellis telemetry studies and lek identification work (aerial & ground); and
3. When data identify sustained population declines, Challis LWG should consider recommending changes in management strategies.

To address risks posed by inappropriate management strategies caused by inadequate data on habitat condition and use:

1. The land management agencies should propose adaptive habitat management strategies (see Section X) using tools such as fire, grazing, mechanical and chemical treatments to meet sage-grouse habitat objectives;
2. The BLM should continue sage-grouse habitat assessments on lands administered by the agency;
3. The Challis LWG will encourage the U.S. Forest Service (USFS) to adopt the same guidelines that are used by the BLM;
4. Whitebark, Inc. will compile and verify known data on habitat condition and use (*completed);*
5. The Challis LWG will coordinate with partners to acquire additional habitat condition and use data to determine seasonal use areas, assess degree of use, and evaluate the condition of those use areas; and
6. All land managers should take the lessons learned from areas where birds are thriving and apply them to areas where birds are limited.

To address risks posed by inappropriate management strategies resulting from inadequate site specific knowledge, including site potential:

1. All land managers should support the Natural Resources Conservation Service (NRCS) work on updating ecological site descriptions.

To address risks posed by the inability of land management agencies to respond to current conditions and needs:

1. All land management agencies should respond to changes in current conditions and needs to the extent as is fiscally and legally possible.

D. Improper Livestock Management – Medium Risk

1. Goal

The goal is to manage livestock grazing to benefit all sage-grouse habitats.

2. Risks

Seven potential risks to sage-grouse populations associated with improper livestock management were identified:

- Livestock grazing and bedding on leks during breeding season;
- Alterations to sagebrush and herbaceous cover that are inconsistent with nesting requirements;
- Nest trampling;
- Permanent/long-term loss of nesting habitat resulting from water developments, i.e., intensified disturbance around troughs;
- Damage to brood-rearing habitat in wetland areas resulting from livestock overgrazing, i.e., loss of vegetation and trampling of springs and meadows; and
- Alterations to sagebrush/forb component that are inconsistent with brood-rearing needs;
- Inadequate funding for rangeland infrastructure.

3. Conservation Measures

The following conservation measures are designed to address the above risks posed by improper livestock management in sage-grouse habitats:

1. To make significant progress towards achieving/maintaining riparian/wetland PFC or late seral conditions based upon Multiple Indicator Monitoring definitions in brood-rearing habitat

(if PFC assessment indicates an area is functioning at risk, or nonfunctional), all land managers should consider the following when conducting permit renewals:
- Annual biological grazing plan (duration, intensity, season of use, timing control);
- Permanent fencing;
- Temporary fencing;
- Piping of water to troughs (off-site water);
- Supplement/mineral placement;
- Herders/riders;
- Target/monitor utilization levels to trigger livestock movement;
- PFC re-assessment; and
- Other creative ideas;

2. All land managers should manage grazing to achieve and maintain appropriate structure and appropriate sagebrush/forb communities to meet sage-grouse habitat needs. The following should be considered through annual authorizations and permit renewals:
   - Annual biological grazing plan (duration, intensity, season of use, timing control);
   - Permanent fencing;
   - Temporary fencing;
   - Piping of water to troughs (off-site water);
   - Supplement/mineral placement;
   - Herders/riders;
   - Target/monitor utilization levels to trigger livestock movement;
   - PFC assessment; and
   - Other creative ideas;
3. When considering livestock conversions (especially cattle to sheep) in sage-grouse habitats, all land managers should establish grazing management that would enhance forb diversity and vegetative cover;
4. Land management agencies should monitor grazing/bedding on active leks and advise livestock operators of active lek locations during annual authorization meetings;
5. Livestock operators should avoid placement of mineral/salt supplements on lek locations during strutting (March though May);
6. All land managers should place water troughs at least 0.6 miles from active leks where possible when existing water developments are replaced and new water developments are constructed;
7. All land managers should install and maintain bird ladders in troughs;
8. All land managers should maintain free-flowing characteristics of springs and wet meadows through the use of float valves or by returning water to a natural channel when existing water developments are replaced and new water developments are constructed;
9. All land managers should consider sage-grouse management objectives in the prioritization funding for rangeland infrastructure; and
10. All land managers should explore other funding mechanisms to increase overall funding levels for rangeland infrastructure.

E. Fire – Medium Risk

1. Goal

The goal is to minimize risks to all sage-grouse habitats resulting from prescribed fires and wildfires.

2. Risks

Four specific risks to sage-grouse habitats associated with wildfire, planned ignition (prescribed), and natural ignition fire events were identified:

- Loss of sagebrush cover associated with leks;
- Alterations to sagebrush that are inconsistent with nesting habitat requirements;
- Alterations to sagebrush/forbs that are inconsistent with brood-rearing habitat needs; and
- Alterations to sagebrush mix that is inconsistent with winter habitat needs.

3. Conservation Measures

The following conservation measures are designed to address the above risks to sage-grouse habitat related to fire.

1. The Challis LWG will map all known habitat use areas within the area of interest (*completed*);
2. The Challis LWG will prioritize and map priority areas for fire suppression (completed);
3. For all wildfires in sage-grouse habitat, land management agencies should assign resource advisors knowledgeable about sage-grouse to work with fire suppression personnel/teams on an as-needed basis.
4. The Challis LWG, in consultation with BLM and USFS fire ecologists and fuel specialists, will prioritize and map areas for maintenance and restoration of sage-grouse habitats (completed);
5. The land management agencies, in consultation with the relevant CWMA, IDFG and NRCS, will develop plans for avoidance of invasives by fall 2007. In addition, the land management agencies, in consultation with the Lemhi CWMA and NRCS, will develop plans for treatment of invasives following each fire event. This conservation measure will be implemented in two steps:
   - The Challis LWG will develop guidelines specific to sage-grouse for use in development of fire suppression and rehabilitation guidelines. These guidelines should be considered for fires that do not entail Wildland Fire Situation Analysis (WFSAs) as well;
   - The land management agencies will develop maps of known weed locations using data provided by the appropriate CWMA (by Spring of 2008; then following each fire event);
6. The land management agencies will conduct evaluations of sage-grouse habitats as soon as possible after each wildfire event to determine if reseeding (with sagebrush, bunch grasses, and native forbs, if possible) is necessary. The results of these evaluations will be incorporated into Burned Area Emergency Rehabilitation Plans and/or emergency Stabilization and Rehabilitation Plans, as appropriate; and
7. The Challis LWG, in cooperation with NRCS, will conduct educational outreach with private landowners before and after fire events regarding conservation measures related to fire.

F. Other Natural Causes – Medium Risk

1. Goal

The goal is to manage sage-grouse habitats to reduce the impacts resulting from natural disturbances.

2. Risks

Five specific risks associated with other natural causes were identified:

- Alterations to sagebrush communities caused by wild horse and wildlife grazing that are inconsistent with nesting and winter habitat requirements (form and canopy);
- Alterations to sagebrush communities caused by insects or disease that are inconsistent with nesting and winter habitat requirements;
- Nest trampling by wild horses or wildlife;
- Damage to brood-rearing habitat in wetlands resulting from overgrazing by wild horses, i.e., loss of vegetation, trampling of springs and meadows; and
- Alterations to all habitats from drought that are inconsistent with sage-grouse needs.

3. Conservation Measures

The following conservation measures are designed to address the above risks related to other natural causes.

1. The BLM Challis Field Office should follow herd management plans for wild horses and stay within appropriate management level;
2. The Challis LWG should discuss, with the land management agencies, the development of drought management plans to address risk factors in all sage-grouse habitats (this conservation measure should be started by December 2009);
3. All land managers should consider reseeding (with sagebrush, bunch grasses, and native forbs, if possible) and treatment of invasive species following major insect/disease infestations;
4. All land managers should evaluate sites where sagebrush form and canopy are inadequate so as to determine if wildlife utilization is the cause; and
5. If wildlife grazing is determined by land managers to be the cause of inadequate sagebrush form and cover, IDFG should consider modifications of herd objectives.

G. Excessive Predation – Low Risk

1. Goal

To reduce risks of excessive predation if a problem is documented.

2. Risks

Six specific risks to sage-grouse populations associated with excessive predation of sage-grouse were identified:

- Nest losses in excess of 60% to avian and mammalian predators;
- Excessive brood losses to avian predators;
- Excessive brood losses to terrestrial mammal predators;
- Excessive losses of adult birds to avian predators;
- Excessive losses of adult birds to terrestrial mammal predators; and
- Inappropriate management strategies resulting from inadequate predation data.

3. Conservation Measures

The following conservation measures are designed to address the above risks posed by predation.

1. If populations are static or declining over a period of three years, the Challis LWG, in cooperation with IDFG, should secure funding for studies, i.e., telemetry, to assess whether predation is additive; and

2. Whenever predation is documented to be excessive, IDFG should consider all relevant guidelines in the decision-making process related to possible predator management measures.

H. Human Disturbance – Low Risk

1. Goal

The goal is to reduce risks of human disturbance.

2. Risks

Three specific risks associated with human disturbance were identified:

- Dispersed recreational activities, i.e., OHV, camping, and hunting, overzealous observers, and untrained volunteers;
- Alterations to sagebrush and forbs that are inconsistent with habitat needs; and
- Loss of escape cover resulting from herbicide treatments.

3. Conservation Measures

The following conservation measures are designed to address the above risks posed by human disturbances in sage-grouse habitats.

1. The Challis LWG, in cooperation with IDFG and user groups, should educate the public and volunteers regarding potential impacts to leks and nesting habitats;
2. The land management agencies should work cooperatively with user groups and volunteers to educate the public and to enforce current OHV restrictions;
3. The land management agencies should strengthen management guidelines for OHV use with respect to sage-grouse habitats;
4. Whenever possible, the Challis LWG should encourage cooperative agreements between federal, state, county, and local law enforcement agencies to support enforcement of OHV regulations;
5. Whenever possible, the Challis LWG should participate in travel management planning processes;
6. All land managers should consider habitat needs prior to implementation of vegetation manipulation (including herbicide applications and mechanical treatment); and
7. The Challis LWG should educate county extension agents, NRCS, soil conservation districts, CWMA, and private landowners regarding habitat needs.

I. Health Risks to Sage-grouse Populations – Low Risk

1. Goal

The goal is to minimize health risks to sage-grouse populations.

2. Risks

Three additional, specific risks to sage-grouse populations were identified:

- Inadequate nutrition;
- Disease, i.e., West Nile Virus; and
- Toxicity related to pesticide use.

3. Conservation Measures

The following conservation measures are designed to address the above risks to sage-grouse populations.

1. All land managers should strive to maintain/improve meadows and riparian areas, without losing forbs;
2. Where necessary, all land managers should consider planting native and/or desired non-native forbs in range restoration and reclamation projects;
3. All land managers should apply management techniques, i.e., grazing systems, inter-seeding, and other mechanical treatments, etc., to achieve optimum forb and insect production;
4. IDFG should submit dead sage-grouse for testing for West Nile Virus within 24 hours of death;
5. All pesticide applicators should follow U.S. Environmental Protection Agency label instructions and restrictions; and
6. All land managers should consider alternatives to pesticides, i.e., biological controls or less toxic chemicals.

J. Overharvest – Low Risk

1. Goal

The goal is to prevent overharvest from legal hunting.

2. Risks

Six specific risks to sage-grouse populations associated with overharvest were identified:

- Human disturbance to leks resulting from hunting;
- Overharvest of a whole population;
- Overharvest of adult female sage-grouse;
- Overharvest of juvenile female sage-grouse;
- Site specific overharvest; and
- Inappropriate management strategies resulting from inadequate harvest data.

3. Conservation Measures

The following conservation measures are designed to address the above risks related to overharvest of sage-grouse populations.

1. As conditions warrant, the Challis LWG should consider all relevant guidelines and current information when making recommendations to the Idaho Fish and Game Commission for changes to hunting regulations;
2. The Challis LWG should recommend implementation of mandatory harvest reporting. The Idaho Department of Fish and Game Commission should establish ongoing mandatory harvest for enhanced population monitoring. Reports should include topographic features/land forms to identify where harvest occurs;
3. Once mandatory harvest reporting has been implemented, IDFG should use the enhanced harvest data to recommend hunting modifications, i.e., closures, limits, permits; and
4. If adverse population impacts are documented, the Challis LWG should recommend changes in falconry regulations to the Idaho Fish and Game Commission.

K. Successional Vegetation Changes in Brood-Rearing Habitat – Low Risk

1. Goal

The goal is to manage uplands, meadows, springs, and riparian zones with an emphasis on brood-rearing habitat requirements.

2. Risks

Two specific risks to brood-rearing habitat associated with meadows, springs and riparian zones were identified:

- Undesirable changes in plant composition, such as loss of forb diversity, through successional changes including overgrowth, stagnation, and conifer encroachment; and
- Sagebrush/forbs plant composition that is inconsistent with sage-grouse needs resulting from inadequate levels of forb diversity on big sagebrush sites.

3. Conservation Measures

The following conservation measures are designed to address the above risks associated with successional vegetation changes in brood-rearing habitat.

1. Whenever meadows, springs or riparian zones are excluded from livestock grazing, all land managers should monitor the forb and cover components. If either component declines, then all land managers should consider a vegetative manipulation that will reverse the decline;
2. Whenever conifers encroach into mesic habitats with a potential for sage-grouse use, all land managers should consider conifer treatment; and
3. Land managers should maintain a mosaic of sagebrush age classes to provide for multiple condition classes using mechanical, biological, chemical, or fire treatments on an on-going basis. In addition, land managers should ensure that the scale of the treatment maintains or creates critical habitat components.

VII. Public Education Measures

The Challis LWG will educate the public on sage-grouse conservation measures as they apply to desired actions. For example, the Challis LWG could develop an educational brochure, participate in CWMA functions, participate in county fairs and rancher schools, etc.

VIII. Implementation Plan

An Implementation Plan (summarizing the conservation measures in this Conservation Plan) is included as Appendix C. The Implementation Plan assigns each conservation measure to a responsible party and specifies when the conservation measure should be carried out.

A. Annual Meetings

Two time sensitive requirements are identified for inputs from the Challis LWG: submission of proposed projects for funding by the Office of Species Conservation (early summer), and completion of an annual report to the Idaho Sage-grouse Advisory Committee by December 31. It would be appropriate for the working group to meet collectively to discuss issues, accomplishments and recommendations at least a few weeks prior to the two time periods.

A full-day meeting in mid to late June with an agenda designed to address the following objectives:

- Discuss project proposals (solicit recommendations from all Challis LWG participants at least a month prior to meeting)
    - project location and timelines
    - costs
    - partners
    - group discussion and final ranking
- Receive agency reports that present new data, i.e., spring lek surveys, winter population observations, telemetry results, harvest information from previous season.

A full day meeting in early December with an agenda designed to address the following objectives:

- Receive reports as follows:
    - agency reports
        - review of new data, i.e., spring lek surveys, winter population observations, telemetry results, harvest information from previous season
        - what and where have agencies implemented recommendations in the Conservation Plan (for annual report)
        - review results of past, implemented projects (for annual report)
        - review wildland fire data, i.e., extent of fires, success of stabilization/restoration
        - current efforts in support of Conservation Plan, i.e., habitat assessments, greater sage-grouse population data collection
        - upcoming projects in support of Conservation Plan
        - recommendations from agencies for modifications to the Conservation Plan
    - landowner reports
        - efforts conducted in support of Conservation Plan
        - submission of population and/or habitat observations
        - recommendations for out-year planning
        - recommendations for modifications to Conservation Plan
    - other participant reports
        - efforts conducted in support of Conservation Plan

- recommendations for out-year planning
- recommendations for modifications to Conservation Plan

- Review implementation of the Challis Sage-grouse Conservation Plan
    - assess accomplishments in light of Conservation Plan direction; identify deficiencies
    - consider modifications to Conservation Plan.
- Discuss items for the annual report (per State Plan):
    - progress and success of project implementation
    - status of studies, research, or research proposals
    - discussion of new issues, project priorities, and problems and
    - actions or projects planned for the ensuing year and
- Affirm the membership of the Steering Committee and the Statewide Advisory Committee representative for the upcoming year.

It is assumed that the Challis LWG will continue to require the services of a neutral group process facilitator for the foreseeable future.

B. Mechanism for Calling Other Meetings

The Challis Local Working Group will have a Steering Committee – composed of representatives of the Idaho Department of Fish and Game, Forest Service, Bureau of Land Management along with a representative of the ranching community and a member of the general public – will determine when a meeting is necessary. Anyone who wants to suggest that a meeting of the Local Working Group be called can contact any member of the Steering Committee. The Steering Committee will decide, then make arrangements with the facilitator.

IX. Monitoring and Evaluation

The Statewide Plan (Idaho Sage-grouse Advisory Committee 2006; *in* 5.2.5.2) contains guidance for the Challis SGPA as follows:

- *Continue to monitor as many leks as possible in the Lemhi and Pahsimeroi drainages. Expand efforts in other areas throughout the planning area (Upper Big Lost, Challis, Morgan and Ellis Creek) through ground counts and aerial surveys.*
- *Multiple years of aerial surveys may need to be conducted to determine lek activity (especially in high snow years).*

The evaluation and monitoring of sage-grouse habitats and selected threats are crucial components in the implementation of the Challis LWG Plan. However, it is not expected that the Challis LWG members will perform the monitoring efforts. Rather, the Challis LWG expects that the various land management agencies responsible for implementing the conservation measures described in this Conservation Plan will conduct the monitoring and evaluation in accordance with agency protocols, and provide annual reports of related activities to the Challis LWG.

For example, the second conservation measure listed under “habitat fragmentation” states that “All land managers should avoid construction of fences within 0.6 miles of active leks.” During the year, each land management agency would know what fences have been constructed, and will report to the Challis LWG on the number and location of new fences. In this way, a record of new fencing can be maintained.

If future lek counts show a sudden increase or decrease in sage-grouse numbers, the overall monitoring record could be examined to determine which conservation measures may need to be applied to ascertain the cause of the change. Specific monitoring protocols then could be developed based on current conditions.

This approach should result in efficient monitoring of sage-grouse populations and habitats without imposing an unrealistic monitoring workload for each conservation measure.

X. Adaptive Management

Webster’s Dictionary defines “adaptive” and “management” as follows:

Adaptive – the ability to adjust to environmental conditions

Management – judicious use of means to accomplish an end

Therefore, Adaptive Management is the ability to adjust to environmental conditions so as to accomplish an objective (in this case improved or stable greater sage-grouse habitats/populations) through the use of sound science based activity planning. Adaptive Management is a five step process that includes: Assessment; Development of Objectives; Activity Design and Implementation; Monitoring; and Modification.

- *Assessment* involves evaluating the current conditions, and in the case of “less than desired” conditions, determining the cause.
- *Objectives* are developed for an area based on the current conditions, site potential, and greater sage-grouse needs.
- *Activity design and implementation* is based, in part, on conservation measures that will result in attaining the desired objectives.
- *Monitoring* is conducted to determine if the activity is being implemented as designed and to determine if the observed results will be effective in reaching the stated objectives.
- *Modification* of objectives and/or activity design may be necessary if the “effectiveness” monitoring shows insufficient progress towards meeting the objective(s). Otherwise, the current activity design and objectives likely would remain in place through the next assessment period. Any changes in strategy are the result of “adaptive management.”

Figure 5 summarizes the adaptive management process.

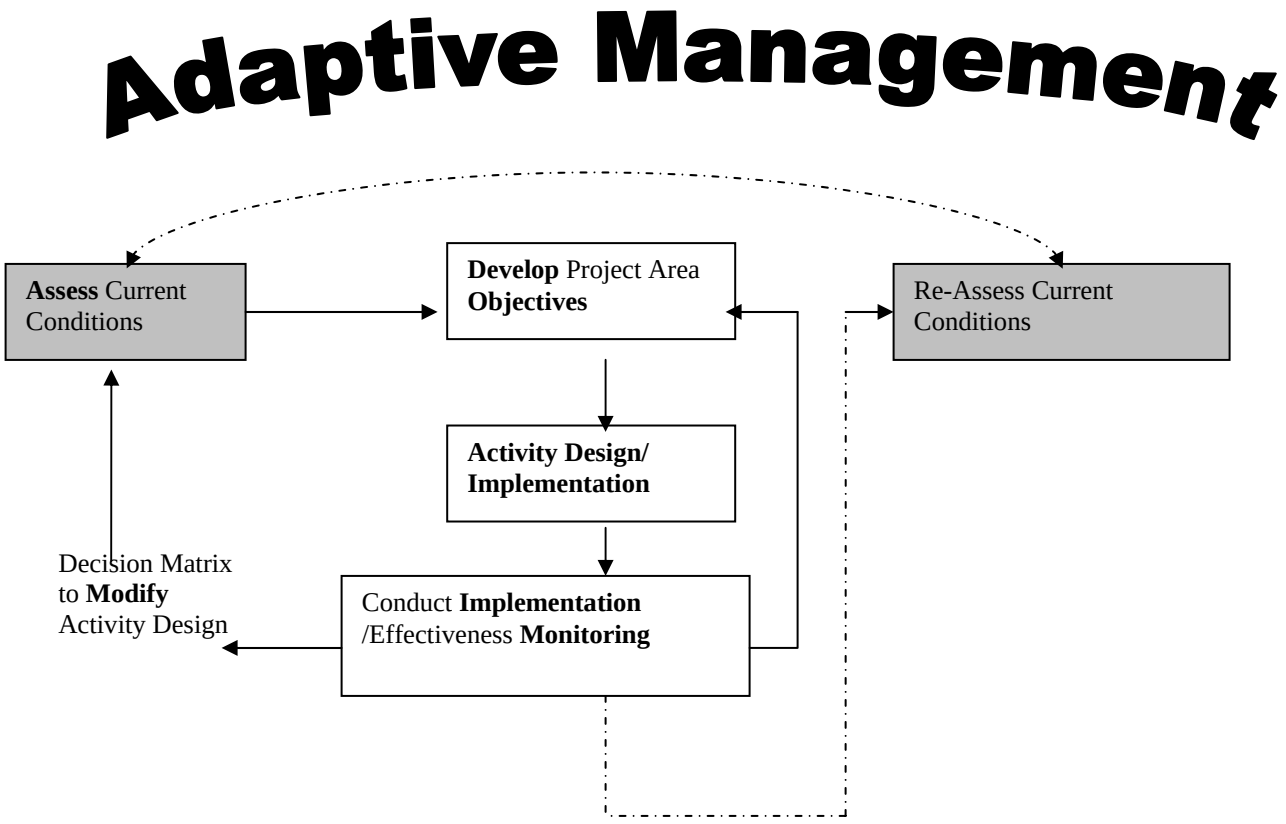


Figure 5. Adaptive Management Process

Figure 6 illustrates a decision matrix that supports the adaptive management process. In accordance with the Conservation Plan for the Greater Sage-grouse in Idaho, the adaptive management process would document the action, responsible party, and the outcomes.

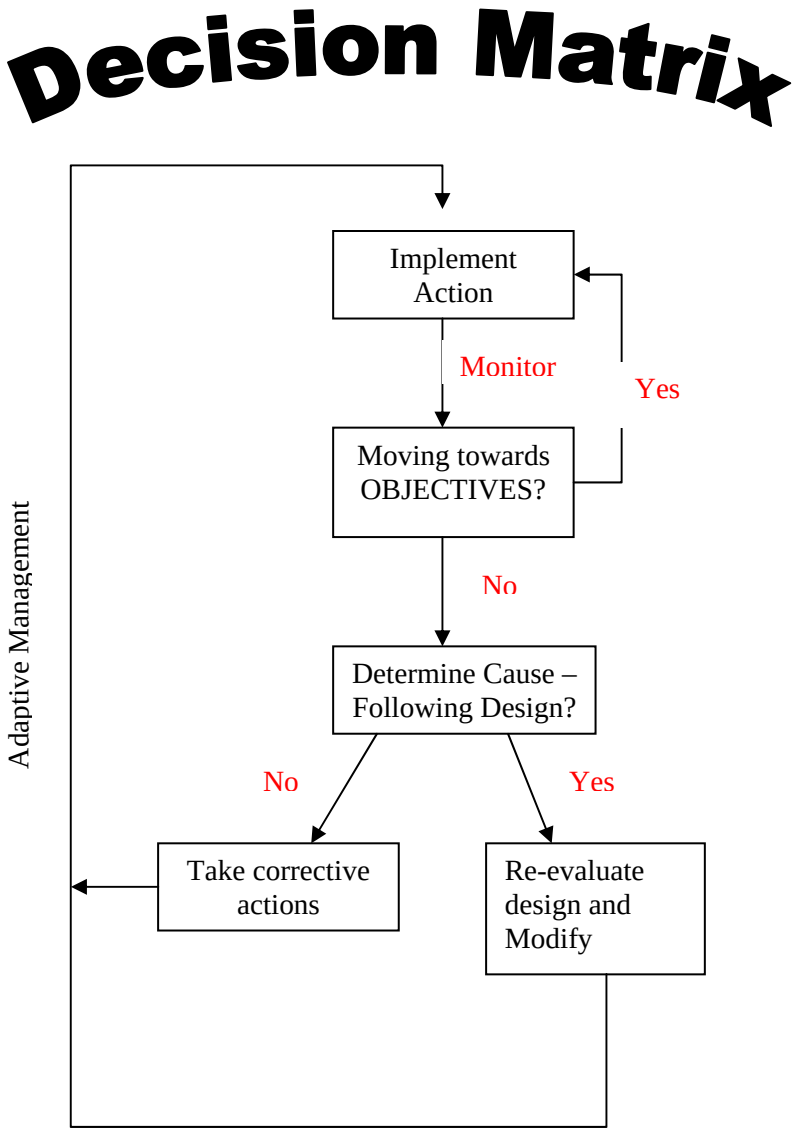


Figure 6. Decision Matrix to Support Adaptive Management

XI. Accomplishments

On an annual basis, the Local Working Group will prepare an Annual Report in accordance with the Statewide Sage-grouse Conservation Plan, including a list of accomplishments.

XII. Literature Citations

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